Pandemic Preparedness Action Plan

Home Academic Resources

Christina School District Families;

As the global outbreak of the Coronavirus (COVID-19) continues to evolve, the Christina School District, working with other districts in Delaware, as well as the Division of Public Health, is taking steps to prepare for the possibility of transmission to our community. As part of the Christina School District’s Pandemic Preparedness Action Plan we are providing the following academic resources in the event of an extended school closure.

The attached resources are meant to provide students with an opportunity to practice previously learned skills while schools are closed. These resources are also available on our website www.christinak12.org for downloading and printing. We ask that your child practice their skills by working on these resources daily. Students should complete the packet to the best of their ability. Students should work at their own pace and can receive support from family members. If students reach a point of frustration, please stop and move on. We also encourage our students to read daily for a minimum of 30 minutes per day. Completion of these activities will help maintain your child’s academic progress until school reopens. Please stay tuned to the Christina School District website for the most recent news and announcements regarding potential school closures.

Grade Level: 4
| 1. MATH: | For 5 days record the temperature. Temp ________
| Temp ________
| Temp ________
| Temp ________
| Temp ________
| Graph the results. |
| 2. MATH: | 4 x 4
| 5 x 5
| 6 x 6
| 7 x 7
| 8 x 8
| 9 x 9
| Name the pattern. |
| 3. MATH: | What time is it now?
| What time will it be in 6 1/2 hours? What time was it 15 minutes ago?
| 18 minutes ago? |
| 4. MATH: | If Mia painted 400 finger nails, how many people did she see that day in her shop?
| If the vet examined 26 dogs, how many paws did she see? |
| 5. MATH: | If the movie actually began at 7:05 and finished at 8:45, how much time elapsed? If you left home at 6:35 and returned at 9:05, how long were you out? |
| 6. MATH: | Survey 10 people about their favorite ice cream or popsicle flavor. Create a pictograph with a key to show the results. |
| 7. MATH: | Keith picked 82 limes from the orchard, and gave 23 limes to Sara. How many limes does Keith have now? Show how you solved this problem. |
| 8. MATH: | Find the perimeter and area of your front or back door. Record and explain. |
| 9. MATH: | Sandy decided to sell her old books. She collected 33 to sell. She sold 22 books. How many books does Sandy have now? |
| 10. MATH: | Make a list of items to get at the grocery store. Estimate the cost. Add up the cost after you buy them. Calculate the difference. |
| 11. MATH: | Draw a picture that only uses geometric shapes. Identify as many shapes as possible. Make a table to show how many of each shape was used. |
| 12. MATH: | Get a canned food item. Record the diameter and circumference of the can in cm. (Hint: You may need a string for measuring the circumference.) |
| 13. MATH: | Find a graph in the newspaper or on the computer. Write 3 statements about the graph. Then create 3 questions that can be answered using the graph. |
| 14. MATH: | Roll a die 25 times. Record the numbers that you roll each time. Which number came up the most? The least? What are the chances of rolling a 5? |
What number should be added to the first number to make the second number?

1. 195 2. 70 3. 280 4. 174 5. 187 6. 226 7. 400 8. 53
   +  +  +  +  +  +  +  +
   373 362 472 238 407 292 432 378

Solve.

9. ___ The sum of a number and 34 is 87. Find the number.

10. ___ A number decreased by 70 is 19. Find the number.

11. ___ The sum of a number and 91 is 187. Find the number.

12. ___ Thirty-seven more than a number is 60. What is the number?

Find the solution.

13. 7 + 3 + 2 + 6 = ___ 14. 7 + 2 + 3 = ___ 15. 5 + 7 + 1 + 5 = ___ 16. 7 + 2 + 1 + 5 = ___
17. 1 + 5 + 1 + 6 = ___ 18. 3 + 5 + 5 = ___ 19. 2 + 4 + 1 = ___ 20. 4 + 7 + 6 + 4 = ___
21. 8 + 8 + 9 + 5 = ___ 22. 2 + 3 + 8 + 2 = ___ 23. 9 + 6 + 6 = ___ 24. 9 + 5 + 9 = ___

Find the sum.

25. 791 + 203 = ___ 26. 839 + 110 = ___ 27. 591 + 207 = ___ 28. 573 + 221 = ___ 29. 870 + 116 = ___
30. 267 + 322 = ___ 31. 741 + 117 = ___ 32. 142 + 334 = ___

Solve.

33. ___ 81 marbles were in the bag. More marbles were added to the bag. Now there are 83 marbles. How many
    marbles were added to the bag?

34. ___ 82 peaches were in the bag. More peaches were added to the bag. Now there are 86 peaches. How
    many peaches were added to the bag?

35. ___ 76 pears are on the counter. 12 more pears are put on the counter. How many pears are on the counter
    now?

36. ___ 151 apples were in the basket. 116 are old and the rest are new. How many apples are new?

37. ___ Jennifer has 78 peaches and Amy has 45 peaches. How many peaches do Jennifer and Amy have
    together?
Find the difference.

38. \[ 480 - 94 = 386 \]
39. \[ 159 - 58 = 101 \]
40. \[ 417 - 48 = 369 \]
41. \[ 277 - 45 = 232 \]
42. \[ 238 - 30 = 208 \]
43. \[ 232 - 34 = 198 \]
44. \[ 419 - 72 = 347 \]
45. \[ 391 - 83 = 308 \]
46. \[ 176 - 53 = 123 \]

Add the coins.

47. \[ \text{total coins} = \] 48. \[ \text{total coins} = \]

Find the sum.

49. \[ 15 + 29 + 30 = 74 \]
50. \[ 77 + 31 + 91 = 199 \]
51. \[ 23 + 62 + 29 = 114 \]
52. \[ 75 + 70 + 61 = 206 \]
53. \[ 88 + 65 + 40 = 193 \]
54. \[ 29 + 70 + 31 = 130 \]
55. \[ 59 + 59 + 38 = 156 \]
56. \[ 38 + 90 + 46 = 174 \]

Multiply.

\[ \begin{array}{ccccccccc}
3 & \times & 10 & = & 30 \\
9 & \times & 6 & = & 54 \\
8 & \times & 7 & = & 56 \\
3 & \times & 7 & = & 21 \\
4 & \times & 6 & = & 24 \\
2 & \times & 8 & = & 16 \\
5 & \times & 3 & = & 15 \\
7 & \times & 8 & = & 56 \\
3 & \times & 7 & = & 21 \\
1 & \times & 10 & = & 10 \\
\end{array} \]

Fill in the empty blanks. Write a rule to represent the relationship between input and output.

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>16</td>
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<tr>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>15</td>
<td></td>
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<table>
<thead>
<tr>
<th>Input</th>
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</thead>
<tbody>
<tr>
<td>15</td>
<td>28</td>
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<td>14</td>
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<td>2</td>
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<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>26</td>
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<tr>
<td>5</td>
<td>23</td>
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<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

What number should be added to the first number to make the second number?

\[ \begin{array}{cccccc}
12 & + & 13 & = & 25 \\
3 & + & 28 & = & 31 \\
5 & + & 10 & = & 15 \\
2 & + & 2 & = & 4 \\
20 & + & 26 & = & 46 \\
13 & + & 15 & = & 28 \\
14 & + & 14 & = & 28 \\
28 & + & 28 & = & 56 \\
\end{array} \]
Multiply.

\[
\begin{array}{cccccccccc}
6 & \times & 4 & & 2 & \times & 9 & & 5 & \times & 1 \\
& & & & 4 & \times & 6 & & 6 & \times & 5 \\
& & & & & & 2 & \times & 2 & & 8 & \times & 1 \\
& & & & & & & & 3 & \times & 3 \\
& & & & & & & & & & 10 & \times & 10 \\
\end{array}
\]

Solve.

hot dog = $1.50 \\
order of French-fries = $0.50 \\
hamburger = $2.50 \\
deluxe cheeseburger = $3.00 \\
cola = $1.00 \\
ice cream cone = $1.00 \\
milk shake = $2.00 \\
taco = $2.50 \\

98. _____ What is the total cost of four hamburgers?

99. _____ If Brian wanted to buy two ice cream cones, four hamburgers, and an order of French-fries, how much money would he need?

100. _____ If Allan wanted to buy three orders of French-fries, how much would he have to pay?

101. _____ What is the total cost of a cola, two milk shakes, and three deluxe cheeseburgers?

102. _____ If Sharon buys three ice cream cones and five hot dogs, and if she had $20.00, how much money will she have left?

Compare the fractions.

103. \( \frac{4}{5} \) \( \frac{3}{4} \) \\
104. \( \frac{4}{5} \) \( \frac{1}{4} \) \\
105. \( \frac{1}{3} \) \( \frac{1}{3} \) \\
106. \( \frac{1}{4} \) \( \frac{6}{8} \) \\
107. \( \frac{1}{3} \) \( \frac{1}{8} \) \\
108. \( \frac{2}{5} \) \( \frac{7}{8} \) \\
109. \( \frac{2}{4} \) \( \frac{1}{5} \) \\
110. \( \frac{2}{4} \) \( \frac{3}{4} \) \\

111. \( \frac{3}{5} \) \( \frac{2}{4} \) \\
112. \( \frac{1}{6} \) \( \frac{1}{3} \) \\
113. \( \frac{3}{5} \) \( \frac{4}{8} \) \\
114. \( \frac{1}{3} \) \( \frac{2}{4} \) \\
115. \( \frac{1}{6} \) \( \frac{2}{3} \) \\
116. \( \frac{3}{5} \) \( \frac{2}{8} \) \\

Identify the fraction.

117. [Diagram] = _____ \\
118. [Diagram] = _____ \\
119. [Diagram] = _____ \\
120. [Diagram] = _____ \\

121. [Diagram] = _____ \\
122. [Diagram] = _____ \\
123. [Diagram] = _____ \\
124. [Diagram] = _____ \\

Find the sum.

125. \( \frac{2}{4} \) \[+\] \( \frac{1}{3} \) \\
126. \( \frac{2}{3} \) \[+\] \( \frac{7}{8} \) \\
127. \( \frac{3}{4} \) \[+\] \( \frac{1}{5} \) \\
128. \( \frac{2}{8} \) \[+\] \( \frac{4}{6} \) \\
129. \( \frac{5}{6} \) \[+\] \( \frac{2}{6} \) \\
130. \( \frac{3}{5} \) \[+\] \( \frac{4}{5} \) \\
131. \( \frac{1}{5} \) \[+\] \( \frac{1}{5} \) \\
132. \( \frac{2}{8} \) \\

- 3 -
Find the difference.

133.  \[ \frac{2}{3} \]  134.  \[ \frac{4}{5} \]  135.  \[ \frac{2}{5} \]  136.  \[ \frac{7}{8} \]  137.  \[ \frac{4}{5} \]  138.  \[ \frac{2}{6} \]  139.  \[ \frac{7}{8} \]  140.  \[ \frac{3}{4} \]

- \[ \frac{1}{5} \] - \[ \frac{5}{6} \] - \[ \frac{1}{6} \] - \[ \frac{4}{6} \] - \[ \frac{6}{6} \] - \[ \frac{1}{6} \] - \[ \frac{6}{6} \] - \[ \frac{1}{4} \]

Identify the fraction.

141. = 142. = 143. =

Find the difference.

144.  460  145.  790  146.  730  147.  510  148.  420  149.  250  150.  380  151.  580

- 330 - 400 - 400 - 110 - 210 - 120 - 200 - 370

Complete the graph.

Favorite Summer Activities

<table>
<thead>
<tr>
<th>Activities</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swimming</td>
<td>11</td>
</tr>
<tr>
<td>Biking</td>
<td>26</td>
</tr>
<tr>
<td>Softball</td>
<td>38</td>
</tr>
<tr>
<td>Hiking</td>
<td>39</td>
</tr>
<tr>
<td>Jump Rope</td>
<td>34</td>
</tr>
<tr>
<td>Hopscotch</td>
<td>27</td>
</tr>
</tbody>
</table>
Fireflies in the Garden

By Robert Lee Frost

Here come real stars to fill the upper skies,
And here on earth come emulating flies,
That though they never equal stars in size,
(And they were never really stars at heart)
Achieve at times a very star-like start.
Only, of course, they can't sustain the part.
1. What kind of insect is this poem about?
   A) dragonflies  
   B) fireflies  
   C) grasshoppers  
   D) ants

2. What does the poet compare and contrast fireflies with in this poem?
   A) stars  
   B) planets  
   C) comets  
   D) planes

3. Read these lines from the poem:

   And here on earth come emulating flies,  
   That though they never equal stars in size,  
   (And they were never really stars at heart)  
   Achieve at times a very star-like start.  
   Only, of course, they can’t sustain the part.

What can you conclude from these lines?
   A) The fireflies cannot act like they are stars for very long.  
   B) The fireflies do not want to be like stars.  
   C) The fireflies are able to shine brightly like stars without ever stopping.  
   D) The fireflies can grow to be the same size as stars.
4. Read these lines from the poem:

That though they never equal stars in size,
(And they were never really stars at heart)
Achieve at times a very star-like start.
Only, of course, they can't sustain the part.

Why might the poet have included the phrase “of course” in the last line?
   A) to show that the poet does not really know much about fireflies
   B) to show that the poet thought the fireflies would be able to sustain the part
   C) to show that the poet wishes that fireflies could sustain the part
   D) to show that the poet is not surprised that fireflies cannot sustain the part

5. What is the main idea of this poem?
   A) Although stars are larger in size, fireflies are more beautiful than stars.
   B) Fireflies live in the garden, while stars appear in the sky.
   C) Fireflies can seem very star-like, but only for a short time.
   D) Fireflies and stars are both interesting things to study.

6. Read these lines from the poem:

And here on earth come emulating flies,
That though they never equal stars in size,
(And they were never really stars at heart)
Achieve at times a very star-like start.

Why might the poet have chosen to use the word “achieve” in the last of these lines?
   A) to make it seem like fireflies do not want to look like stars
   B) to make it seem like fireflies sometimes look like stars by accident
   C) to make it seem like fireflies are very intelligent insects
   D) to make it seem like fireflies are trying and succeeding at looking like stars
7. What does the word “they” refer to throughout the poem?
   A) skies
   B) flies
   C) stars
   D) parts

8. What are two ways that the poet contrasts flies and stars in this poem?

9. In what way are flies similar to stars, based on the poem?

10. “Emulating” means imitating, or trying to be like something else. Why might the poet have called fireflies “emulating flies” in this poem? Use evidence from the text to support your answer.
Harbor of Rio de Janeiro

On January 1, 1502, an explorer from Portugal named Goncalo Coelho and his crew sailed into a huge bay by what is now Brazil. A bay is a body of water that is partly surrounded by land. The explorers thought they had found the mouth of a large river. So they named the place "Rio de Janeiro," or "River of January." The bay they found is known today as the Harbor of Rio de Janeiro.

The Harbor of Rio de Janeiro is the world's largest natural bay, containing more water than any other bay in the world! Because of its size, the Harbor of Rio de Janeiro is considered one of the world's seven natural wonders.

The bay is surrounded by mountains made from granite. The mountains are huge and steep, with odd shapes. One of these mountains was named after a sugar loaf, because it looks like a type of bread made on an island near Portugal. Another one was named Corcovado, or "The Hunchback," because of its mound-like shape. Together, the water and mountains create a beautiful harbor.

The beauty of the harbor attracts people to this day. Tourists from all over the world come to see the gorgeous harbor and the city of Rio de Janeiro. People have even built cable cars and trains to accommodate tourists and show them around the area.
1. The Harbor of Rio de Janeiro is the largest natural bay in the world. According to the text, what is a bay?
   A. a body of water that is completely surrounded by land
   B. an area of land that is surrounded by water
   C. a body of water that is partly surrounded by land
   D. an area of land that is partly surrounded by water

2. What does the text describe?
   A. Goncalo Coelho's trip to Brazil
   B. how bays form
   C. the difference between rivers and bays
   D. the Harbor of Rio de Janeiro

3. Read these sentences from the text.

   The Harbor of Rio de Janeiro is the world's largest natural bay, containing more water than any other bay in the world!

   [...]  

   The bay is surrounded by mountains made from granite. The mountains are huge and steep, with odd shapes. . . . Together, the water and mountains create a beautiful harbor.

   What conclusion does this information support?

   A. The Harbor of Rio de Janeiro is a very cold place.
   B. The Harbor of Rio de Janeiro is a very impressive place.
   C. The Harbor of Rio de Janeiro doesn't have a lot of plant and animal life.
   D. The Harbor of Rio de Janeiro is a very poor place.
4. Based on the text, what can be concluded about the world's seven natural wonders?

A. The world's seven natural wonders are natural places that have a lot of rocks.
B. The world's seven natural wonders are places with a lot of buried treasure.
C. The world's seven natural wonders are strange places people have built.
D. The world's seven natural wonders are very impressive natural places.

5. What is the main idea of this text?

A. The Harbor of Rio de Janeiro is the world's largest bay and a beautiful place with water and mountains.
B. Concalo Coelho was a Portuguese explorer who sailed to Brazil in the 1500s.
C. The mountains of the Harbor of Rio de Janeiro are huge and have odd shapes.
D. Tourists from all over the world go to see the gorgeous harbor and the city of Rio de Janeiro.

6. Read these sentences from the text.

"The bay is surrounded by mountains made from granite. The mountains are huge and steep, with odd shapes. One of these mountains was named after a sugar loaf, because it looks like a type of bread made on an island near Portugal. Another one was named Corcovado, or 'The Hunchback,' because of its mound-like shape. Together, the water and mountains create a beautiful harbor."

Why does the author discuss the mountain named after a sugar loaf and the mountain called "The Hunchback"?

A. to contrast the way the mountains by the Harbor of Rio de Janeiro were described earlier in the text
B. to give the reader examples of mountains with odd shapes by the Harbor of Rio de Janeiro
C. to give the reader examples of different mountains around the world
D. to show that people sometimes give funny names to mountains
7. Choose the answer that best completes the sentence.

The Harbor of Rio de Janeiro is considered one of the world's seven natural wonders ______ it is very large.

A. however  
B. on the other hand  
C. although  
D. because

8. Describe the mountains that surround the Harbor of Rio de Janeiro.

Support your answer with evidence from the text.

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

9. Why do people from all over the world visit the Harbor of Rio de Janeiro?

Support your answer with evidence from the text.

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________
10. Imagine you wanted to convince a friend to join you on a trip to the Harbor of Rio de Janeiro. Explain the argument you might make to your friend to persuade him or her to join you.

Support your answer with evidence from the text.
Fixing My Sister’s Bike

Kyria Abrahams

I love to fix things. I’m only eight years old, but I can figure lots of stuff out by myself. I want to be a scientist when I grow up.

Last week, the red, shiny reflector came off my sister’s bicycle seat. My sister Ariel said she wanted to take it to the bicycle repair shop to be fixed.

“No way!” I stopped her. “I know how to fix things, so I’ll fix this too!”

“Well, it had better work!” Ariel said. She looked like she didn’t believe me.

I got some rope from the closet, and I tied the reflector right back onto the bike. It dangled a little bit, but it still worked just fine.

“It looks messy,” Ariel said.

When my dad came home, I showed him how I had fixed the bike.

“Do you think that’s the best solution?” he asked me.

I looked over at the reflector. On second glance, it didn’t look that secure after all. There were some pieces of rope hanging off.

I shrugged.

“Yes! It’s fine!” I said.

I thought it was the best solution. I had come up with it, after all, so it had to be the best.

“Okay,” he said. “Let’s see how long it stays attached to the bike.”
My dad said he was proud of me for taking initiative. That means I see something that needs to be fixed and do it without being told!

“I think I have a new lesson for you, though,” Dad said. “I want to show you how to conduct an experiment.”

I had come up with a solution to a problem, and now the second step was to test it under different conditions.

I asked my sister when she was planning to go for a bike ride. She said at 2:00 p.m.

I grabbed a pen and a piece of paper and made two columns on the paper. One column said GOOD, and one column said BAD. At 2:00, I went outside to watch her ride.

First, she rode down the sidewalk and the reflector stayed on. I made a checkmark in the GOOD column.

Next, she went over a bump and the reflector stayed on. I made another checkmark. Good again!

Then, she rode underneath a tree. Uh oh! I knew what was coming next.

One of the branches from the tree swept across the back of her bike, and the next thing I knew the whole reflector was untied and on the ground!

Ariel cried out, “My reflector!”

I made another checkmark, this time in the column that said BAD.

“Back to the drawing board!” I said.

“Grrrr!” said Ariel.

Later that night, my dad and I sat down with my paper to look at the checkmarks.

“Under what conditions did the reflector stay on the bike?” he asked me.

I looked. “Well, it stayed on when the bike was riding normally, but it fell off when it was hit by that tree branch.”
“What you have on that sheet of paper is called scientific data,” Dad said. “What do you think you can learn from this?”

“I don’t think the rope worked very well,” I said.

“I don’t think so, either,” he said. “But you did have to test it first to be sure.”

“Well, I tested it and now I know.”

“What will hold the reflector on a little bit better?”

“Let’s use glue!” I said.

We went downstairs, where the family keeps all our tools. Dad pulled the bike up onto the bench and took out the Super Glue.

I’m not allowed to use strong glue by myself. So we did this part together.

We let the glue dry overnight, and the next day I conducted my experiment all over again.

“You’re not going to break my reflector again, are you?” my sister asked. She looked a little mad and suspicious.

“Well, I don’t think so,” I told her. “But that’s what this experiment is for. Do you trust me?”

“I guess so,” Ariel said. “But mainly because Dad helped this time!” She stuck her tongue out at me.

I made her ride the bike exactly the same way she had the last time so that we could try to recreate the conditions. This is important in a scientific experiment.

She rode down the sidewalk. The reflector stayed on. So far, so good!

Then, I had her go over the bump again. The reflector stayed on. I made another checkmark. But now it was time for the final test.

“Okay, get ready!” I yelled. “It’s time to ride under the tree!”

Just like last time, my sister rode under the tree. However, this time, the reflector stayed on the bike.
“Yay! It didn’t fall off!” Ariel squealed happily.

I was pretty proud myself. I made a great big checkmark in the GOOD column, and then drew a smiley face just for fun.

I turned around to see that my dad had been watching the entire time.

“Excellent work, little scientist,” he said. “You recreated the experiment and found the solution to your sister’s bike problem.”

“And I saved us a trip to the bike shop!” I said.

“You sure did,” Ariel said. And then she gave me a great big hug.
1. What keeps falling off Ariel’s bicycle?
   A the front wheel
   B the back wheel
   C the reflector
   D the seat

2. The narrator is the person who is telling the story. In this story, the narrator is Ariel’s sibling. How does the narrator finally solve the problem of the reflector falling off Ariel’s bike?
   A by taking Ariel’s bike to a repair shop
   B by tying the reflector on with some rope from a closet
   C by asking their dad to fix the reflector by himself
   D by gluing the reflector on with help from their dad

3. Rope does not keep the reflector on the bike as well as glue does.
What evidence from the passage supports this statement?
   A Ariel’s father helps to glue the reflector onto the bike after the reflector falls off a second time.
   B After the reflector is tied onto the bike with rope, it stays on when Ariel rides down the sidewalk.
   C After the reflector is tied onto the bike with rope, it stays on when Ariel rides over a bump.
   D The reflector falls off after being tied onto the bike, but it does not fall off after being glued on.

4. Why does Ariel give the narrator a hug at the end of the story?
   A Ariel is upset about how long it has taken to fix the bike.
   B Ariel is happy that the narrator has fixed the bike.
   C Ariel is excited to take her bike to a repair shop.
   D Ariel is confused because she does not understand how the narrator fixed the bike.

5. What is this story mainly about?
   A two siblings who do not get along until their dad makes them be nice to each other
   B a bike that is unsafe to ride because it is falling apart
   C a problem with a bike and what the narrator does to solve it
   D a girl whose bike breaks and what happens when she takes it to a repair shop
6. Read the following sentence: "Last week, the red, shiny **reflector** came off my sister’s bicycle seat."

What does the word "reflector" mean?

- A a wheel that turns very slowly
- B something that shines when light hits it
- C a type of metal that is worth a lot of money
- D a safety pad that someone riding a bicycle wears

7. Choose the answer that best completes the sentence below.

The narrator tries fixing the reflector with glue _______ rope does not work.

- A after
- B although
- C before
- D so

8. What causes the reflector to fall off Ariel’s bike after it has been tied on with rope?
9. What are the three bike riding conditions that the narrator has Ariel recreate after gluing the reflector on Ariel’s bike?

10. Why is recreating these conditions important to the narrator’s experiment?
Robot Finger Template

Look at the drawing of the bones in your hand (below). You’re going to be making a “robot” version of your pointer finger.

Bone 4 is the bone in the palm of your hand.

Finger 1, 2, and 3 are finger bones.
Volcano Discoveries

1. Suppose you wanted to tell an explorer where to look for volcanoes. Check the box of the sentence you would choose.
   - You can find just as many volcanoes in the middle of a continent as you can near the coast.
   - You can find more volcanoes near the ocean than you can in the middle of the continent.

2. If you had to describe how the volcanoes on your map are arranged, what sentence would you choose?
   - The volcanoes are scattered evenly across the map.
   - The volcanoes are in groups near the coast.

3. What if you wanted a volcano to pop up in your backyard? Where would you choose to live and why?
   Use information from your map to explain.

   ______________________

   ______________________

   ______________________

   ______________________

   ______________________

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   ______________________

   ______________________

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   ______________________

MYSTERY
SCIENCE

The Birth of Rocks | Mystery 1
You recently learned about the wavelengths of sound waves. You've learned that different sounds have different wavelengths. For example, a tuba makes a low sound that has a long wavelength, but a flute makes a high sound that has a short wavelength. Pretend your teacher has given you a long piece of string and asked you to use it to model what sound waves look like. You can lay the string on your desk and bend it to make different wave shapes.

2. Imagine your teacher plays the high-pitched sound of a bird singing. Draw what the string on your desk should look like when you use it to create a model for the sound waves of the bird song.

3. Imagine your teacher plays the low-pitched sound of a whale singing. Draw what the string on your desk should look like when you use it to create a model for the sound waves of the whale song.
1. Mateo, Katy, and Robb are all competing in a sled race. They raced each other three times. Mateo always started from Height A. Katy always started from Height B, and Robb always started from Height C. The table shows how fast each person was going when they reached the forest at the bottom of the hill each time. The winner is the person that goes the fastest.

<table>
<thead>
<tr>
<th>Sleder</th>
<th>Trial #1</th>
<th>Trial #2</th>
<th>Trial #3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mateo</td>
<td>24 miles per hour</td>
<td>21 miles per hour</td>
<td>22 miles per hour</td>
</tr>
<tr>
<td>Katy</td>
<td>17 miles per hour</td>
<td>16 miles per hour</td>
<td>18 miles per hour</td>
</tr>
<tr>
<td>Robb</td>
<td>10 miles per hour</td>
<td>9 miles per hour</td>
<td>8 miles per hour</td>
</tr>
</tbody>
</table>

What kind of pattern do you notice?

a. Mateo always went faster than Katy and Robb.
b. Katy always went faster than Mateo and Robb.
c. Robb always went faster than Mateo and Katy.

2. Why does the same person always win the sled races? Explain in terms of energy.
Energizing Everything

Mystery 3: Why is the first hill of a roller coaster always the highest?

End of Mystery Assessment

The picture above shows the first hill of three different roller coasters. It also shows the height of that first hill, the top speed, and the total number of hills for each roller coaster.

1. What is the best explanation for the pattern that you observe?
   a. The more riders a roller coaster has, the more energy the roller coaster will have and the faster it will go.
   b. The more popular a roller coaster is, the more energy it will have and the faster it will go.
   c. The higher the first hill of a roller coaster is, the more energy the roller coaster will have and the faster it will go.
   d. The more hills a roller coaster has, the more energy the roller coaster will have and the faster it will go.

2. If the Xcelerator coaster has a second hill, what is the maximum height that the second hill can be?
   a. 50 ft
   b. 100 ft
   c. 200 ft
   d. 300 ft

3. Why did you choose your answer to Question 2? Explain in terms of energy.
Energizing Everything
Mystery 6: What if there were no electricity?

End of Mystery Assessment

1. Put an 'x' next to the things that would stop working during a power outage (when the electricity goes out in your neighborhood or city):

   __ bus
   __ microwave
   __ ceiling fan
   __ TV
   __ car
   __ cash register
   __ cell phone
   __ lamp
   __ faucet
   __ air conditioning

   Explain how you decided which items would stop working. How are they different from the items that kept working?

   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________

2. Can you think of examples of how electrical energy is used to create different kinds of energy? Try to come up with at least one additional example for each one.

   A. Light? (ex: flashlight) ______________________________________
      _________________________________________________________

   B. Heat? (ex: oven) _________________________________________
      _________________________________________________________

   C. Sound? (ex: radio) _______________________________________
      _________________________________________________________
Energizing Everything

Mystery 7: How long did it take to travel across the country before cars and planes?

End of Mystery Assessment

1. A fuel is something that...
   a. contains stored energy
   b. can burn
   c. releases heat
   d. all of the above

2. Steam locomotives (trains) move by burning fuel that...
   a. releases energy from height
   b. releases electrical energy
   c. releases heat energy
   d. stores energy in batteries

3. TRUE or FALSE? (circle one)  Energy comes in many forms.

4. How can you tell that stored energy is being released? Describe two pieces of evidence that you could see, hear, or feel.

__________________________
__________________________
__________________________

Energizing Everything | Mystery 7
ENERGY PLAN
for Boulderville

You can draw what your energy plan needs on the map if you like.

What’s the Plan?

Dear Boulderville Town Council,

We have figured out an excellent plan to provide your town with electricity.

You can get the energy you need using (circle your choice):

Wind    Sun    Water    A combination of: __________________________

Our plan will work because (come up with at least three reasons):

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Sincerely, __________________________

If you need more space, write on the back.

Mystery Science
Energizing Everything | Mystery 8
Report from Greensburg, Kansas

From the Mayor

On May 4th, 2007, a tornado knocked down all the buildings in our town. We needed to rebuild the town. We wanted our new town to get its electricity from the wind. Then we would have less air pollution.

There was plenty of room for windmills around the town. So we built ten big windmills. When the wind blows, the windmills turn. The turning windmills change wind energy into electrical energy.

The wind blows almost every day in our town. It blows hard and fast. That’s a good thing. The wind has to blow at least 15 miles per hour to make the windmills turn. (That’s at least 6 meters per second.) When the wind doesn’t blow fast enough, the windmills don’t turn. Our ten windmills make enough electricity for four towns the size of Greensburg. We sell our extra electricity to other towns.

1. What are the benefits or advantages of using energy from wind?

2. What are possible problems or disadvantages of using energy from wind?

3. What does Greensburg have that makes energy from wind a good choice for this town?

4. Does Boulderville have what it needs to use energy from wind? Explain.